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AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A method of establishing an electrical connection between a recombinant mammalian cell and a myocardial cell, the method comprising:

contacting a myocardial cell with a recombinant ~~mammalian~~ **fibroblast** cell genetically modified to produce a connexin protein, said contacting being in a manner sufficient to provide for production of an electrical connection between the myocardial cell and the recombinant cell;

wherein an electrical connection between the recombinant cell and the myocardial cell is established.

2. - 5. **(Canceled)**

6. (Original) The method of claim 1, wherein the connexin protein is a connexin 43 protein.

7. **(Currently Amended)** ~~A~~ **The** method of claim 1, wherein said contacting comprises implanting the recombinant cell into myocardial tissue of a subject.

8. **(Currently Amended)** The method of claim 1, wherein after the electrical connection between the recombinant cell and the myocardial cell is established, the recombinant cell **exhibits** ~~has similar~~ conductive characteristics similar to **that of** the myocardial cell.

9. – 12. **(Canceled)**

13. **(Currently Amended)** A method of establishing an electrical connection between a recombinant ~~skeletal-muscle~~ **fibroblast** cell and a myocardial cell, the method comprising:

contacting a myocardial cell with a recombinant ~~skeletal-myoblast~~ **fibroblast** cell genetically modified to express a recombinant connexin 43 protein, said contacting being in a manner sufficient to provide for production of an electrical connection between the myocardial cell and the recombinant ~~skeletal-myoblast~~ **fibroblast** cell;

wherein an electrical connection between the recombinant ~~skeletal-myoblast~~ **fibroblast** cell and the myocardial cell is established so that the recombinant ~~skeletal-myoblast~~ **fibroblast** cell has similar conductive characteristics ~~as the~~ **of the** myocardial cell.

14. **(Currently Amended)** A method for treating a cardiac conduction disturbance in a host, the method comprising:

introducing into cardiac tissue of a host a therapeutically effective amount of a recombinant ~~mammalian~~ **fibroblast** cell, which recombinant cell is genetically modified to express a connexin protein, said introducing being effective to establish an electrical connection between the recombinant cell and a myocardial cell of the host cardiac tissue;

wherein the cardiac conduction disturbance in the host is treated.

15. – 18. **(Canceled)**

19. (Original) The method of claim 14, wherein the connexin protein is a connexin 43 protein.

20. (Original) The method of claim 14, wherein said introducing comprises implanting the recombinant cell into an infarct region of the cardiac tissue.

21. (Original) The method of claim 14, wherein the recombinant cell is autologous to the host.

22. **(Currently Amended)** A method for treating a cardiac conduction disturbance in a mammalian host, the method comprising:

introducing into cardiac tissue of the host a therapeutically effective amount of a **recombinant fibroblast** ~~skeletal-muscle~~ cell genetically modified to express a connexin 43 protein, said introducing

being effective to establish an electrical connection between the introduced recombinant ~~skeletal muscle~~
fibroblast cell and a myocardial cell of the host cardiac tissue;
wherein the cardiac conduction disturbance is treated.

23. – 24. (Canceled)

25. (Original) The method of claim 22, wherein said introducing comprises implanting the recombinant cell into an infarct region of the cardiac tissue.

26. (Currently Amended) The method of claim 22, wherein the recombinant ~~skeletal muscle~~
fibroblast cell is autologous to the host.